

Survey Data Submission Standards (*Proposed*)

In order to maintain and improve County land records general survey standards must be followed. Land parcels subject to the requirements specified herein, are required to be referenced by South Carolina State Plane Coordinates, as defined in the SC Code of Laws, (The South Carolina Coordinate Act, as amended), either by Global Positioning System (GPS) Surveys or Terrestrial Surveys. Additionally, digital files shall be submitted in a standard format, in addition to standard printed documents required by this Article. These files consist of a copy of the CAD drawing containing all applicable layers and an ASCII text file describing the technical parameters and contact information for the CAD file (metadata).

A. Surveys Requiring State Plane Coordinate Reference

The following surveys require a State Plane Coordinate reference.

1. Any subdivision of eight (8) or more lots total aggregate including all phases and sections severed from parent parcel, at the time of this ordinance.
2. Boundary surveys of 25 or more acres total aggregate, unless exempted in Section B below.

B. Surveys Exempt from Geodetic Control Monument Tie

It is considered very desirable for surveyors to tie all surveys, whenever possible, to the state plane coordinate system. Nothing in these exemptions is intended to discourage surveyors from tying surveys to the state plane coordinate system.

The following surveys are exempted from state plane coordinate reference:

1. Re-tracement surveys of property in existing, platted subdivisions already recorded in the Greenwood County Register of Deeds Office.
- ~~2. Boundary surveys located in unzoned areas of the County, of less than 100 acres total aggregate.~~
3. Any boundary survey more than one mile in distance as measured along public roads from a published geodetic monument.
4. Any survey not specified in Section A.

C. Survey Requirements

Survey requirements specified in this document are only for referencing land parcels to state plane coordinates. Boundary surveys shall be performed in accordance with the State Minimum Standards published by the State Board of

Registration for Professional Engineers and Land Surveyors unless more stringent requirements are specified herein. In so far as possible, Control surveys between geodetic monuments and property boundaries shall be extended from the nearest geodetic control monument(s). The specifications for horizontal control are as follows:

1. Global Positioning System (GPS) Surveys:

GPS procedures shall be followed to ensure survey grade compatibility with the nearest geodetic control monuments. Survey grade GPS receivers shall be used with a manufactures stated accuracy of at least $\pm 5 \text{ cm} \pm 2 \text{ ppm}$. It is realized that the nearest station may not always be suitable for occupation by GPS because of obstructions, property owner permission or other reasons. The intent here is to make ties to network stations within 10 kilometers (6.214 miles) of the project and to establish new coordinates on property corners to a spatial accuracy of 0.2 feet.

2. Terrestrial Survey monument ties shall meet South Carolina Class **B** Standards.

3. Plat Requirements:

a) All Directions shall be referenced to South Carolina Grid.

b) Distances shall be ground distances (not Grid distances).

D. Electronic Submission Applicability and Content

1. All plats subject to the requirements specified herein and submitted for recording, shall be accompanied by an electronic copy, as specified by the Electronic Submission Standards and Procedures described below.

2. The only use of the electronic information submitted will be for the anonymous inclusion into the Greenwood County GIS system. Disclaimers and limiting statements may be placed in electronic submissions, provided such disclaimers do not direct liability to the County or create indemnification by the County to the party submitting electronic files.

3. Submitted files shall contain, at a minimum, parcels, rights-of-way, ground control points, street centerlines, easements, lot numbers, lot dimensions, road names, and easement types if these elements are shown on the submitted, printed document.

E. Electronic Submission Standards and Procedures

1. Plats and drawings will be submitted as a drawing file in DWG or DXF format on standard storage media approved by Greenwood County. Such

media include 3.5 inch floppy or CD-ROM disks. The use of alternate media requires County approval prior to submission.

2. The submitted media shall be legibly labeled with the drawing or plat name, filename, drawing type (preliminary, final, as-built, etc.), project contact information (name, affiliation, phone number, and e-mail address), and submittal and file creation dates.

3. Coordinate datum shall be the current South Carolina State Plane Coordinate System as specified in the South Carolina Code of Laws.

4. South Carolina State Plane Coordinates shall be inherent to the submitted drawing file. That is, the submitted drawing file shall contain South Carolina State Plane coordinates, not local grid or paper space coordinates.

5. To the extent possible, the submitted drawing file will be named the same as the hardcopy plat. File names must not exceed 27 characters. Long subdivision or plat file names may be abbreviated as long as there is a clear relationship to the name of the hardcopy plat.

****6. The submitted drawing file will include features and text classified by the standard layer and naming convention shown in Exhibit 1 below. Drawing features and associated text shall not be combined in one layer. Text included in drawing files will use standard fonts that can be read without third-party software.**

7. Closure is critical in converting CAD features to GIS features. All linear and polygon features must be snapped closed, when applicable, and free of symbols (circles at property corners) that break line continuity.

8. Submitted drawing files shall contain only complete parcel polygon features in the PARCEL1 layer (Exhibit 1 below). Incomplete parcel boundaries, provided for reference, may be included in an open layer, not shown in Exhibit 1 below.

9. A metadata text file with the same name as the drawing file (<drawing_file_name.txt) is required with each electronic submission. This text file will provide technical parameters and contact information for the survey as specified in Exhibit 2 below.

F. Penalty For Non Conformance

Greenwood County will not record plats for surveys that do not meet the Surveying requirements contained herein. Failure to comply with the Electronic Submission requirements will result in an additional recording fee of \$100.00. A completed

metadata sheet, as specified in Exhibit 2 below, must accompany non-electronic plat submissions.

Exhibit 1 Drawing File (DWG / DXF) Specifications

Layer Number	Layer Name	Feature Type	Layer Description
2	PARCEL1	Line	Parcel/lot boundaries
4	ROW1	Line	Rights of way delineating private/public land boundary
6	GCP1	Point	Ground control points for drawing file.
17	CNTRLIN1	Line	Street/road centerlines (paved and unpaved)
26	EAS	Line	Utilities, wildlife, transp., storm drainage/detention, etc.
51	LOTNUM1	Text	Proposed parcel lot number
52	LOTDIM1	Text	Bearings, distances, acreage, and x/y of POB
54	RDNAME1	Text	Street/road name
55	RDNAME2	Text	Road number (Federal, State, County highways, etc.)
59	EASTYPE	Text	Type of easement (utility, transp., wildlife, storm, etc.)

NOTE: Only layers applicable to a given plat need to be submitted.

Exhibit 2

Metadata Text File (<drawing_file_name>.txt') Specifications

Please Complete All Applicable Items

Plat/Subdivision Name:

Drawing / File Name:

Type of Drawing (Preliminary, Final, As-Built, etc.):

Submittal Date:

County:

City:

Parent Parcel #:

Number of Lots:

Type of Survey (GPS or Terrestrial):

Referenced Monument Names/Numbers:

Plat Tie Point Description:

Grid Bearing and Grid Distance to Monuments:

State Plane Coordinates of the Plat Tie Point

GPS Unit Type (Manufacturer and Model):

Elevation Reference: Y / N

Prepared by/Firm Name:

Street Address:

City:
State:
Zip Code:
Phone Number:
E-mail:
Software/Version Used:

Exhibit 3

General Survey Standards Background

Greenwood County has made a substantial investment in a modern, computerized, multipurpose land information system. This system is referred to as the Greenwood County Geographic Information System (GIS). The GIS is primarily a foundation of geographic information to support and improve County operations and community decision-making. As such, this information is a representation of geographic features that comprise Greenwood County. These data are not intended to represent legal boundaries of any kind and are for information purposes only. The signed and sealed plat of record shall be referenced for all legal matters.

The base maps for this system are referenced to the Lambert Conformal single-zone South Carolina State Plane Coordinate System, which is based on the North American Datum of 1983. Geodetic survey monuments, usually consisting of a metal disk placed in top of a concrete post, have been placed throughout the county. Data sheets containing descriptions, and state plane coordinate values for these monuments are available from the South Carolina Geodetic Survey. These geodetic control monuments control the county mapping system. For the purpose of this Article, monumented geodetic control points are only those geodetic monuments recognized by the South Carolina Geodetic Survey as being part of the state geodetic network. Property surveys affected by this ordinance will be referenced to their geographic locations, and therefore can be placed in their proper position on the state plane coordinate based county mapping system. Additionally, referencing property corners to state plane coordinates will improve County land records by allowing ground surveys to be properly translated to the GIS.

In addition to referencing property surveys to state plane coordinates, a key to streamlining the translation from ground surveys to the County's GIS is leveraging the advanced techniques surveyors, engineers, and land-development professionals are currently using. Specifically, property surveys are created using computer-aided design and drafting (CAD) tools and stored in a digital format, conceptually similar to the County's GIS. Submission of property surveys, affected by this Article, will be in a digital or electronic format. This requirement will expedite the design, plan review, and data maintenance processes within the County as well as improve data quality. For electronic submission to bring these expected benefits, standards must exist to ensure efficient data translation while preserving the integrity and accuracy of the original measurements.